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| 10/576,311 | 04/18/2006 | Paul Mattheijssen | NL 031254 | 9412 |
| 65913 | 7550 | 08/17/2009 | EXAMINER | |
| NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131 | | | MUL GARY | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2416 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary**Application No.**

10/576,311

Applicant(s)

MATTHEIJSEN ET AL.

Examiner

GARY MUI

Art Unit

2416

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-8 and 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of the claims

1. Claims 2 and 9 has been canceled.
2. Claims 1, 3 – 8, and 10 – 18 and newly added claims 19 and 20 are currently pending.

Response to Arguments

3. Applicant's arguments with respect to claims 1, 3- 8, and 10 – 18 have been considered but are moot in view of the new ground(s) of rejection.
4. In response to the user remarks in regards to the objection of the drawing, the arguments have found to be persuasive and objection has been vacated. However, it is recommended by the examiner to label figures 1 - 4 with the --Prior Art-- label for the benefit of the public.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 3 – 5, 7, 8, 10 – 12, 14, 17 – 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Jia et al. (US 7,356,089 B2; hereinafter “Jia”).

For claim 1, Jia teaches a transmitter for simultaneously transmitting at least a first and a second signals (see column 2 lines 56 – 67; first and second signals are transmitted

simultaneously), the first signal being modulated according to a first modulation constellation (see column 2 lines 56 – 67 and column 8 line 56 – column 9 line 5; first signal going through the first constellation); the second signal being modulated according to a second modulation constellation (see column 2 lines 56 – 67 and column 8 line 56 – column 9 line 5; second signal going through the second constellation); wherein the transmitter is arranged to pre-code at least the first signal through a modification of the first modulation constellation so as to prevent a correlation between the at least first and second simultaneously transmitted signal (see column 7 lines 50 – 67; the new constellation is created where the constellation is a rotation by a phase offset); wherein the pre-coding of at least the first signal comprises a rotation of the first modulation constellation through a first angle (see column 7 lines 50 – 67; rotation of the constellation).

For claim 3, Jia teaches the pre-coding of at least the first signal comprises a change of the order of the first modulation constellation (see column 8 line 56 - column 9 line 5).

For claim 4, Jia teaches the pre-coding further comprising a change of the number of the number of simultaneously transmitted signals (see column 8 line 56 – column 9 line 5).

For claim 5, Jia teaches transmitter is arranged to pre-code at least the first signal after receipt of a first signal from a receiver of the at least first and second simultaneously transmitted signals (see column 8 line 56 – column 9 line 5).

For claim 7, Jia teaches the first and second modulation constellations are M-ary QAM modulation constellations (see column 8 line 56 – column 9 line 5).

For claim 8, Jia teaches a receiver for simultaneously receiving at least a first and a second signal from a transmitter (see column 3 lines 42 – 56; receiver for receiving a simultaneous

signal); the first received signal being modulated according to a first modulation constellation (see column 2 lines 56 – 67 and column 8 line 56 – column 9 line 5; first signal going through the first constellation); the second received signal being modulated according to a second modulation constellation (see column 2 lines 56 – 67 and column 8 line 56 – column 9 line 5; second signal going through the second constellation); in which at least the first received signal is pre-coded through a modification of the first modulation constellation so as to prevent a correlation between the at least first and second simultaneously received signals (see column 7 lines 50 – 67; the new constellation is created where the constellation is a rotation by a phase offset); wherein the pre-coding of at least the first signal comprises a rotation of the first modulation constellation through a first angle (see column 7 lines 50 – 67; rotation of the constellation).

For claim 10, Jia teaches the pre-coding of at least the first signal comprises a change of the order of the first modulation constellation (see column 8 line 56 - column 9 line 5).

For claim 11, Jia teaches the pre-coding further comprising a change of the number of the number of simultaneously transmitted signals (see column 8 line 56 – column 9 line 5).

For claim 12, Jia teaches transmitter is arranged to pre-code at least the first signal after receipt of a first signal from a receiver of the at least first and second simultaneously transmitted signals (see column 8 line 56 – column 9 line 5).

For claim 14, Jia teaches the first and second modulation constellations are M-ary QAM modulation constellations (see column 8 line 56 – column 9 line 5).

For claim 17, Jia teaches a wireless device (see column 1 lines 13 – 27) comprising a transmitter according to claim 1 (see above for transmitter for claim 1).

For claim 18, Jia teaches a telecommunication system (see column 1 lines 13 – 27) comprising a transmitter according to claim 1 (see above for transmitter for claim 1).

For claim 19, Jia teaches the first transmitted signal is orthogonal to the second transmitted signal and the orthogonally between the first transmitted signal and the second transmitted signal is not provided by communication channel (see column 8 line 56 - column 9 line 5).

For claim 20, Jia teaches the first transmitted signal is orthogonal to the second transmitted signal and the orthogonally between the first transmitted signal and the second transmitted signal is not provided by communication channel (see column 8 line 56 - column 9 line 5).

Claim Rejections - 35 USC § 103

7. Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jia in view of Kwan et al. (US 2003/0081692 A1; hereinafter “Kwan”).

For claim 6, Jia teaches all of the claimed subject matter with the exception the transmitter is arranged to transmit a second signal to a receiver of the at least first and second signals in order to notify the receiver about the pre-coding of at least the first signal. However Kwan teaches the transmitter is arranged to transmit a second signal to a receiver of the at least first and second signals in order to notify the receiver about the pre-coding of at least the first signal (Kwan, abstract, teaches that the optimized modulation and coding scheme (MCS) is communicated from a transmitter to a receiver in a wireless communications system.) Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the transmitter is arranged to transmit a second signal to a receiver of the at least first and second signals in order to notify the receiver about the pre-coding of at least the first

signal of Kwan into Jia. The motivation for doing this is to notifying the modulation change to the receiver such as to prepare the receiver for the new modulation scheme for more efficient operation in the analogous art of wireless communications.

For claim 13, Jia teaches all of the claimed subject matter with the exception the receiver is arranged to receive a second signal from the transmitter in a response to the transmitter pre-coding at least the first signal. However Kwan teaches the receiver is arranged to receive a second signal from the transmitter in a response to the transmitter pre-coding at least the first signal (Kwan, abstract, teaches that the optimized modulation and coding scheme (MCS) is communicated from a transmitter to a receiver in a wireless communications system.) Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the receiver is arranged to receive a second signal from the transmitter in a response to the transmitter pre-coding at least the first signal of Kwan into Jia. The motivation for doing this is to notifying the modulation change to the receiver such as to prepare the receiver for the new modulation scheme for more efficient operation in the analogous art of wireless communications.

Claim Rejections - 35 USC § 103

8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jia in view of Currivan et al. (US 2005/0141460 A9; hereinafter “Currivan”).

For claim 15, Jia teaches all of the claimed subject matter with the exception a transceiver. However Currivan teaches a transceiver (Currivan, figure 7, teaches a transceiver which comprises a transmitter and a receiver). Thus it would have been obvious to one of ordinary

skill in the art at the time the invention was made to implement a transceiver of Currivan into Jia. The motivation for doing this use of a transceiver which combines a transmitter and a receiver such as to build a typical node in a communication system (Currivan, figure 7 shows that a typical communication node is a transceiver) in the analogous art of telecommunications.

For claim 16, Jia teaches a receiver for simultaneously receiving at least a first and a second signal from a transmitter (see column 3 lines 42 – 56; receiver for receiving a simultaneous signal), the first received signal being modulated according to a first modulation constellation (see column 2 lines 56 – 67 and column 8 line 56 – column 9 line 5; first signal going through the first constellation); the second received signal being modulated according to a second modulation constellation (see column 2 lines 56 – 67 and column 8 line 56 – column 9 line 5; second signal going through the second constellation); in which at least the first received signal is pre-coded through a modification of the first modulation constellation so as to prevent a correlation between the at least first and second simultaneously received signals (see column 7 lines 50 – 67; the new constellation is created where the constellation is a rotation by a phase offset). Jia teaches all of the claimed subject matter with the exception a transceiver. However Currivan teaches a transceiver (Currivan, figure 7, teaches a transceiver which comprises a transmitter and a receiver). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a transceiver of Currivan into Jia. The motivation for doing this use of a transceiver which combines a transmitter and a receiver such as to build a typical node in a communication system

(Curriuan, figure 7 shows that a typical communication node is a transceiver) in the analogous art of telecommunications.

Conclusion

9. **Examiner's Note:** Examiner has cited particular paragraphs or columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY MUI whose telephone number is (571)270-1420. The examiner can normally be reached on Mon. - Thurs. 9 - 3 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be

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obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
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2416

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08/11/2009